

**UNIVERSITY OF GONDAR
COLLEGE OF MEDICINE AND HEALTH SCIENCES
INSTITUTE OF PUBLIC HEALTH**

**FACTORS AFFECTING UTILIZATION OF SKILLED DELIVERY
AMONG WOMEN IN SOUTHERN ETHIOPIA**

By: Habtamu Tadesse (BSc)

ADVISOR: Dr. Getahun Asres (MD, MPH, DTM&H)

**A THESIS SUBMITTED TO THE INSTITUTE OF PUBLIC HEALTH,
COLLEGE OF MEDICINE AND HEALTH SCIENCES, UNIVERSITY OF
GONDAR IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
DEGREE OF MASTER OF PUBLIC HEALTH**

**June 2012
GONDAR, ETHIOPIA**

**UNIVERSITY OF GONDAR
COLLEGE OF MEDICINE AND HEALTH SCIENCE
INSTITUTE OF PUBLIC HEALTH**

**FACTORS AFFECTING UTILIZATION OF SKILLED DELIVERY
AMONG WOMEN IN SOUTHERN ETHIOPIA, 2012**

By: HABTAMU TADESSE

Address:

Tell: +251-920813242

P. O .Box: 78, DURAME ETHIOPIA

Email: hatw83@yahoo.com

Approved by the examining board

Head, Institute of public health

Advisor: Dr. Getahun Asres MD, MPH, DTM&H

Examiners

**June, 2012
Gondar, Ethiopia**

Acknowledgement

First of all thanks almighty GOD Who helped me always when I need His

My deepest acknowledgement goes to my advisor, Dr. Getahun Asres, for timely, valuable and constructive comments, which have been very helpful improving and guiding the whole research process.

Very specially thanks goes to Teketel Tadesse, Tegegn Deginet for their comments and supervision during the data collection and all my families unreserved support during the whole process of the research.

My heartfelt thanks go to the study participants, without their genuine this work could not be finished.

Also I wish to thank all my instructors who thought me during my MPH without their help this material may not come to completion.

Acronyms

ANC	Antenatal Care
FDRE	Federal Democratic Republic of Ethiopia
HC	Health Center
HEWs	Health Extension Workers
HIV	Human Immunodeficiency Virus
MDG	Millennium Development Goals
MMR	Maternal Mortality Rate
MOH	Ministry Of Health
NGOs	Non-Governmental Organizations
SNNPR	Southern Nations Nationalities Peoples Region
TBAs	Traditional Birth Attendants
UNICEF	United Nations International Children Emergency Fund
WHO	World Health Organization

Table of contents

Acknowledgement	I
Acronyms	I
Table of contents	III
List of Tables	V
List of Figures	V
Abstract	VI
1. Introduction	1
1.1 Statement of the problem	1
1.2 Literature Review	2
1.3 Justification of the study	6
2. Objective	7
3. Methods	7
3.1 Study Area	7
3.2. Study Period	7
3.3. Study Design	8
3.4. Source Population	8
3.5. Study population	8
3.5.1 Inclusion criteria	8
3.5.1 Exclusion criteria	8
3.6 Sample size and sampling technique	8
3.7. Variables of study	10
3.7.1. Dependent variables	10
3.7.2 Independent variables	10
3.8. Operational definitions	10
3.9. Data collection tools and procedures	10
3.10. Data processing and analysis	10
3.11. Data Quality Assurance	11
4. Ethical considerations	12
5. Dissemination of Results	12
6. Results	12
7. Discussion	22
8. Strength and limitations of the study	24
9. Conclusion	25
10. Recommendation	25
11. References	26
12. Annex	29
Annex A: Conceptual framework	29
Annex B: Consent form	30
Annex C: Questionnaire	31
Annex D: Information sheet	36
Annex E: Kembatigna version	37
Annex F: Declaration	44

List of Tables

Table 1: Socio-demographic characteristics of participant mothers aged
Kedida Gamela District, 2012. 14

Table 2 Practice of participant mothers during their pregnancy Kedida
Woreda, 2012 17

Table 3 Obstetric and delivery characteristics of respondents kedida
District 2012, Ethiopia 17

Table 4 Multiple logistic regression analysis results of factors affecting
delivery utilization in kedida Gamela district, 2012 Ethiopia 20

List of Figures

Figure 1: Schematic representation of sampling procedure for assessing
affecting utilization of skilled delivery service in Kedida Gamela woreda.
9

Figure 2. Bar chart showing ANC attendance versus type of assistance in
delivery kedida Gamela woreda, 2012 16

Abstract

Introduction: Approximately 358,000 maternal deaths occur annually, of which over 95% occur in sub-Saharan Africa and Asia. One major reason for very high level of maternal mortality levels in Ethiopia is lack of skilled birth attendant during birth. The individual or health system factors that affect women's preferences for delivery places are not well known. This study is believed to establish an insight about women's actual practice on skilled delivery care.

Objectives: To assess factors affecting utilization of skilled delivery services among women in Kedida Gemela District, Southern Ethiopia.

Methods: Community based unmatched case control study was conducted women who gave birth in the last one year. Cases are those women who got skilled delivery service and controls are those who didn't have skilled delivery service. Simple random sampling technique was employed and a total of 126 cases and 251 controls were included in the study. Face to face interview using a pre-tested questionnaire was used to collect the data. Data entry was done by INFO Version 3.5 and analyzed by SPSS Version16.

Result: Maternal education (AOR=3.00 95% CI: 1.196 to 7.541), ANC attendance (AOR=3.150, 95%CI: 1.825 to 5.437) availability of information on delivery place place (AOR= 3.744 95%CI: 2.228 to 6.291) transport availability to the nearest health facility (AOR=1.94, 95%CI: 1.179 to 3.194), birth order (AOR= 3.883 95%CI: 1.78 to 8.472) were found to be independently associated with skilled delivery service.

Conclusion: Maternal educations, ANC attendance, transport availability to the nearest health facility, information availability on place of delivery and birth order were the major factors independently affecting skilled delivery service utilization. Based on these empirical findings it is suggested that comprehensive efforts to expand community based Information, Education and Communication should be made. Investment on maternal education, more efforts on improvement and provision of ANC and further coordinated efforts on the part of the government in expansion of health facilities to rural population are also suggested.

1. Introduction

1.1 Statement of the problem

Approximately 358,000 maternal deaths occur annually, of which 95% occur in sub-Saharan Africa and Asia. Africa has the highest of maternal mortality in the world and sub-Saharan Africa is largely responsible for the dismal maternal death figure for that region, contributing approximately 98% of the maternal deaths for the The lifetime risk of maternal death in sub-Saharan Africa is 1 in 22 mothers compared to 1 in 210 in Northern Africa, 1 in 62 for 120 for Asia, and 1 in 290 for Latin America and the Caribbean(1, In spite of the national and global effort at curbing maternal mortality, through the safe motherhood initiative, the problem is still disproportionately high in many developing countries(3). According The United Nations International Children's Emergency Fund estimates it is estimated that 1,600 women all over the world die as a result of pregnancy and childbirth problems and the greater of these deaths occur in developing countries (1,4,5).

One of the objectives of the United Nations Millennium Goals (MDGs) was to reduce Maternal Mortality Rate (MMR) by an average of 5.4% every year over the period 1990-2015. Most Sub-Saharan African countries are not on the right track for meeting the pertaining to MMR. Recent estimates suggest that the average of reduction in MMR in sub-Saharan African countries is less than the 14 countries in the world with the highest MMR per 100,000 live births, 13 are in sub-Saharan Africa (of which Ethiopia is one) (4– The current estimate of maternal mortality ratio in Ethiopia is 676 in Ethiopian Demographic and health Survey(8) per each 100,000 live but it would have been 425 per each 100,000 live births at this time order to achieve the Millennium Development Goals by 2015 (9). major reason for very high level of maternal mortality levels in that of lack of skilled birth attendant during birth (10). The HSDP 32% skilled birth attendant use by 2010 but only about 12% use in the four most populated regions of the country in 2009.

In many developing countries including Ethiopia, the majority of occurred without the help of a skilled assistant however, home or skilled deliveries associated with un-hygienic, unsupervised and intervention is required it usually is not at hand and lead to maternal and infant outcomes (11).

Most obstetric complications occur around the time of delivery and be predicted. Therefore it is important that all pregnant women access to a skilled attendant (12). Skilled attendance at delivery is advocated as the "single most important factor in preventing

deaths" (13). Access to skilled delivery care is also crucial to stillbirths and to improve newborn survival (12,14).

Skilled attendance at delivery is one of the key indicators to reflect progress towards the Millennium Development Goal of improving maternal health. Globally, the goal is to have 80% of all births skilled attendants by 2005, 85% by 2010 and 90% by 2015 (13).

Although proportion of skilled birth attendants is one of the MDG 5 births attended by skilled health personnel in Ethiopia is during EDHS 2005 and 10% in EDHS 2011 preliminary report, remaining are home deliveries (8,14).

Despite the fact that skilled delivery service utilization is essential improvement of maternal and child health, the utilization is very low the associated factors are less explored in this particular study Examining the factors that women experience in accessing skilled service is an important first step towards identifying appropriate intervention to increase skilled delivery utilization. And this study identify factors affecting utilization of skilled birth attendance among recently delivered women.

1.2 Literature Review

Home deliveries without a skilled attendant are chosen or occur for variety of reasons. The Health Behavioral Models proposed by (1995) for instance identifies three main sets of characteristics that determine the utilization of skilled delivery service namely, enabling and need factors (18).

1.2.1 Socio-demographic factors

Age: Most studies on determinants of delivery service use consider those with a multivariate analysis find either no effect (19) of age or higher use of skilled attendance among older mothers compared to younger mothers (20). There is still a debate about how women's influences utilization of delivery services.

Marital status: Marital status may influence the choice of delivery probably via its influence on female autonomy and status or financial resources. Single or divorced women may be poorer but greater autonomy than those currently married. Young single be cared for by their natal family, which may encourage skilled attendance, especially for a first birth. On the other hand, single may be stigmatized and prefer to deliver at home because they negative provider interaction (21).

Residence: different studies done in Ethiopia show strong between urban residence and skilled birth assistance (22,23).

in Nigeria shows no association between places of residence and birth attendance (24).

Education: Maternal education is one of the most important determining women's antenatal and delivery care seeking behavior order to reach adequate maternal health services (25). Education have more decision-making power, increased self-worth and self-confidence, better coping(25,26). Studies in Mexico (27) and (28) showed Mothers with primary and higher education were more to deliver at a health facilities compared to those without any formal education; Study done in Nigeria (29) found a significant positive association between education and maternal health services Also in agreement with these, in most studies done in Ethiopia has been consistently associated with utilization of maternal health (25,30) Some studies also indicate that considering husband's find that higher education is associated with skilled attendance at although the effect is often less than that of the mother's own (31,32). And some other studies show no association with husband education.(33)

Women's decision making power: In many parts of the world power to make decision is limited even in issues related to their health. In India About two-thirds of women said they could not visit health center without male Permission (34). Studies in Bangladesh shows that decision where to give birth are decided by mother in-husbands. Studies in Africa, Tanzania, (36) also show women do deliver in health facility due to husband refusal to pay the prospective community based follow up study conducted in Jimma shows that odds of intention to have skilled delivery services is 8 for women who can decide by themselves to have ID services(25)

Cultural and beliefs: Studies done in Mexico (27) and Ethiopia indicate not only by the presence of physical disease but also by perceptiveness of the illness skilled birth assistance is affected. rural Bangladesh (35) showed the vast majorities believed that is an act of God and is a natural event. Study done in Zambia perception that pregnancy is not illness (37) Beliefs that birth is a endurance, and care-seeking a sign of weakness specific around delivery position, warmth, and handling of the placenta another reason for delivering alone in some contexts (20).

Religion: Religion has also shown variable pattern of association service utilization, with significant association in some settings but some findings (21).

Regarding socio economic factors women with poor house hold and those who are un employed were less likely to utilize skilled assistance across different studies(20,22,25).

1.2.2 Obstetric related factors:

Birth orders, ANC follow-up and past history of pregnancy are significantly associated with skilled birth assistance across studies.

ANC follow-up: Study done in Burkinafaso shows that having least 3 ANC visits were positively associated with delivering in a (38).Receiving counseling on birth preparedness during antenatal appeared to strongly influence women's use of skilled care during delivery(30).

Although most pregnancy and delivery related complications cannot predicted, high quality antenatal care (ANC) during pregnancy is recognized as an important opportunity for promoting health and education, instituting prophylactic measures for disease prevention, managing existing diseases and other health conditions, and managing maternal health complications (11).

Across different studies as birth order increases utilization of skilled assistance decreases (38).

Studies conducted to assess the relationship between knowledge skilled delivery service utilization consistently showed that, strong predictor of maternity service utilization, those having good knowledge about danger signs of pregnancy and delivery is more using skilled delivery (36,37).

1.2.3 Health service related factors

Distance to health facility: The distances from health facilities, in to poor road conditions were major concerns, particularly for those in remote areas (28,39).

Study done in Zambia shows distance to health facility has similar influence as that of low maternal education, household poverty, or female autonomy in getting skilled assistance (37). While another done in Tanzania shows minor influence of distance to health skilled delivery assistance (40)In Ethiopia the situation is similar women who are living in areas more than one hour distance are to use skilled birth attendance (25).

Study done Kenya shows that fear of operation is also an important system related factor that leads to low utilization of skilled birth assistance (41).

Quality of care: quality of care is an important consideration in the decision to seek care. As several studies from developed and countries indicate, health services barriers and women's perception quality of ANC were important factors affecting women's during pregnancy (29,42,43).The role that quality of care plays in

decision to seek care is related to people's own assessment of delivery, which largely depends on their own experiences with the system and those of people they know.

1.3 Justification of the study

Skilled attendance at childbirth is crucial for decreasing maternal neonatal mortality, yet many women in low- and middle-income deliver outside of health facilities, without skilled help. Skilled at delivery is one of the key indicators to reflect progress towards Millennium Development Goal of improving maternal health. the goal is to have 80% of all births assisted by skilled attendants 85% by 2010 and 90% by 2015. And similarly in our country only women have their deliveries attended by skilled birth attendant. majority of the women not visiting the facilities for skilled delivery services even after attending ANC during their pregnancy, which women who at least have access to health facilities? What factors determine women's preference to places of delivery? Different review indicates that, most of the studies done in this area are sectional, in which it will be difficult to establish the temporal between explanatory factors and the outcome skilled delivery To my understanding there is no previous study done in this study about factors affecting skilled delivery/institutional delivery This study tries to understand factors affecting skilled delivery among mothers who recently gave birth by using case control study to increase the strength of relationship between explanatory factors outcome skilled delivery utilization. The findings from this study will give a highlight into the factors that determine delivery service utilization of pregnant women and this helpful for the relevant stakeholders in the planning and intervention activities to improve the delivery service utilization of pregnant women in the study area, region and country level.

2. Objective

- ◆ To assess factors affecting utilization of skilled delivery services recently (one year preceding the research) delivered women in Kedida District, Kembata Tembaro Zone, southern Ethiopia, 2012.

3. Methods

3.1 Study Area

The study was carried out in Kedida Gemela District, Kembata Zone, SNNPR, which is located in the southern part of the country. Kedida Gemela District is one of the seven districts of the of Tembaro zone. The district is sub-divided in to eighteen (one urban seventeen rural) kebeles bounded by East-Alaba special woreda, Kechebira Woreda by North-Hadiya and by South Hadiya and zone. Total population size of the District is 104,056 of which males and 53,067 females. In the woreda there is one district health centers, and 18 health posts.

3.2. Study Period

The study was conducted from April 10 to April 30, 2012.

3.3. Study Design

Community based un-matched case control study design was

3.4. Source Population

The source populations were all women who deliver their babies the study period in Kedida Gamela District, Kembata Tembaro Southern Ethiopia.

3.5. Study population

The study populations were all mothers who deliver their babies in one year prior to the study period. The study population was cases and controls:

Case: Women who receive skilled assistance during the most delivery were taken as a case.

Control: A women who didn't receive skilled assistance during the recent delivery was taken as control.

3.5.1 Inclusion criteria

All women who give birth in the last one year were included study.

3.5.1 Exclusion criteria

Mothers who are not permanent residents of the study area last six months were excluded in the study.

3.6 Sample size and sampling technique

Sample size was determined by using Epi Info version 3.5.1

Assumption:

- ✓ Confidence level =95%
- ✓ Power =80%
- ✓ Case to control ratio = 1:2
- ✓ Proportion of exposure in controls =59.1% (from study done Metekel zone, Benishangul)

ANC use is taken as exposure.

The calculated sample size was 372. Adding 10% non-response final sample size was 408 (136 cases and 272 controls.)

Simple Random sampling technique was used for selection of samples. First Six kebele's (1urban and 5 rural) were selected represent the District. Then all mothers who give birth in the last were registered in each kebele in two categories and number given for each house before the actual data collection process. simple random sampling technique the required sample was taken category A and interviewed. For category B (cases) all the available sample were taken.

Category A: those who delivered in non-skilled
 Category B: those who deliver in skilled situation.
 If there are two or more mothers in the same house only one was
 lottery method for category A (controls). After getting the total
 mothers who give birth in the last year in each kebele the sample
 proportionally allocated to represent each kebele.

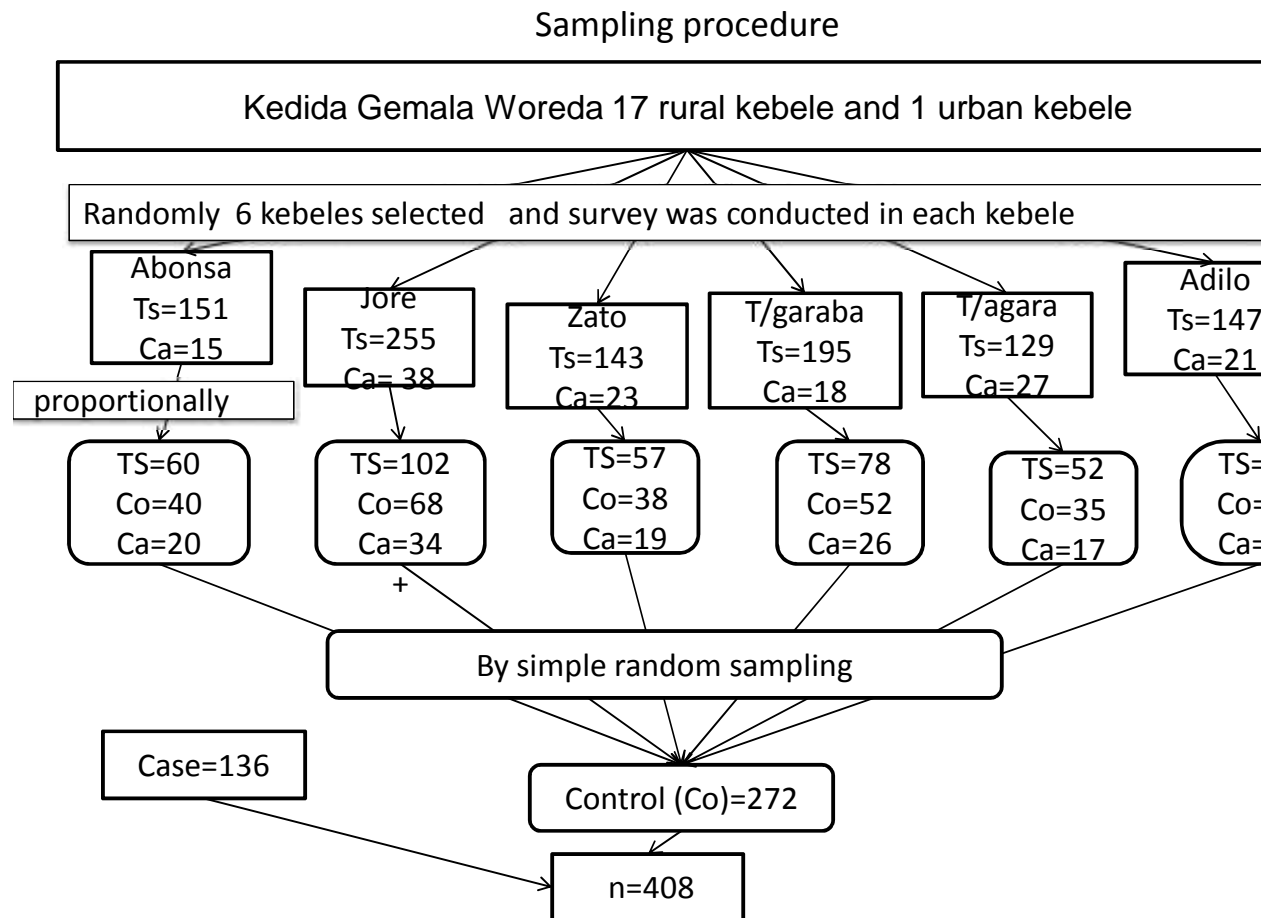


Figure 1: Schematic representation of sampling procedure for assessing factors affecting utilization of skilled delivery service in Kedida Gamela woreda.

Key: TS- Total sample Ca- cases
 Co- controls

3.7. Variables of study

3.7.1. Dependent variables

Type of assistance (skilled or non skilled)

3.7.2 Independent variables

- ✓ Socio-demographical factors: Maternal age, Mother's education, Marital status, Residence, Husband's education,
- ✓ Socio economic factors: house hold income, access to radio, women decision making power
- ✓ Obstetric factors: birth order, prenatal visits and past history of pregnancy complications.
- ✓ ANC visits
- ✓ Information about delivery place
- ✓ Women perception about the use of skilled assistance
- ✓ Health service related factors: Previous facility distance to the health facility, health workers approach, and operation.

3.8. Operational definitions

Institutional/skilled delivery is any deliver that occurred in modern facility and assisted by medically trained professional such as doctors, nurses and midwife

3.9. Data collection tools and procedures

Face to face interview using a pre-tested, semi-structured was used to collect the data. Data was collected by trained data and the training was given for two days by principal investigator. To meet the objectives of this study, the questionnaire was collect information about all the relevant variables. The pre-tested to identify potential problem of the questionnaires, unanticipated interpretations and cultural objections to any of 5% (in six case and 13 controls) respondents having similar with the study subjects nearby the study area. Five diploma level nurses were recruited for the data collection. Data collectors have responsibility to fill the questionnaire properly and also answered difficulties from the respondents during the process of filling the questionnaire. During the process the principal investigator data collectors and made immediate correction for problems Finally the investigator checked the questionnaires for their

3.10. Data processing and analysis

The data was entered, cleaned and edited by EPI-Info 3.5.1 2008 transferred by stat transfer for further analysis by using SPSS statistical package by principal investigator. Data cleaning was to check for accuracy, and consistencies and missed values and

Descriptive statistics of the collected data were done for most the study using statistical measurements. Frequency tables, charts, percentages, means and standard deviations were used. Bivariate was conducted primarily to check which variables have association the dependent variable individually. Variables found to have with the dependent variables at 0.2 probability were entered in to multivariate logistic regression for controlling the possible effect of confounders and finally the variables which have significant were identified on the basis of Odds Ratio OR, with 95%CI and values to fit into the final regression model.

3.11. Data Quality Assurance

The questionnaire was prepared in English and translated to local Kambatigna and back to English to keep the consistency of the and increase understanding of respondents.

Training of data collectors and supervisors and pre testing of was made to check for ambiguity and sequencing of questions, actual data collection time. Double data entry was done by the investigator to keep accuracy of the data.

In addition, the completeness, accuracy and consistency of the data were checked on daily basis during the data collection time, by principal investigator and trained supervisor.

4. Ethical considerations

The study was carried out after getting permission from the ethical review of Institute of public health, university of Gondar. A letter of support which indicates the objective of the study was written to SNNPR, health bureau, University of Gondar. Permission letter was obtained from the regional bureau (RHB), zonal health department and District health office the selected study kebeles.

The purpose and importance of the study was explained to the was collected after full informed written consent was obtained and of the information was also maintained by omitting their names and identification or privacy.

5. Dissemination of Results

The final report will be presented as partial fulfillment of the degree of public health to Institute of public health, Gondar University. Findings of study will be submitted to University of Gondar Institute of Public Health, Kembata Tembaro zonal health department and to respective District where the study was done. Also the results will be disseminated through Publication in local or international journals.

6. Results

Of the total 408 study participants who were selected from selected Kedida Gamela District 377 eligible study participants were involved response rate of 92.4%. The reasons for 7.6% non response were refusal participate. Of these eligible participants, 126 were cases and 251 were

6.1 Socio-demographic characteristics of the study participants

The mean age of the study participants was 27.15 years (25.61 years for 27.91 years for controls), with a SD of 5.84 (5.95 for controls and 5.338 for years. Kembata was the main ethnic group 325(86.2%) both in cases and controls 226 (90%). More than three fourth of respondents' religion Protestant 287(76.1%) followed by Orthodox 34(9.0%). About 361(95.8%) respondents, cases 120(96) and controls 241(96) were married. educational level majority 217(57.6%) of mothers have attended primary

education 66(52.4%) cases and 151(60.2%) controls. Similarly husbands 54(42.9%) cases and 159(63.3%) controls attended primary. Income wise, large majority of controls 106(42.4%) have average monthly income of less than 200 Ethiopian birr while 37(29.4%) of case have more than 500 Ethiopian birr. The socio demographic characteristics of respondents are summarized in table 1.

Table 1: Socio-demographic characteristics of participant mothers aged
Kedida Gamela District, 2012.

Variables	Cases(n=126)	Controls (n=251)	Total (N=377)
	No (%)	No (%)	No (%)
Current Age			
15-19	12(9.5)	10(4.0)	22(5.8)
20-24	47(37.3)	55(21.9)	102(27.1)
25-29	39(31.0)	94(37.5)	133(35.3)
30-34	18(14.30)	44(17.5)	62(16.4)
35+	10(7.9)	48(19.1)	58(15.4)
Ethnicity			
Alaba	4(3.2)	5(2.0)	9(2.4)
Amhara	8(6.3)	7(2.8)	15(4.0)
Hadiya	12(9.5)	13(5.2)	25(6.6)
Kembata	99(78.6)	226(90.0)	325(86.2)
Others	3(2.4)	-----	3(0.8)
Religion			
Catholic	13(10.3)	16(6.4)	29(7.7)
Muslim	7(5.6)	4(1.6)	11(2.9)
Orthodox	15(11.9)	19(7.6)	34(9.0)
Protestant	87(69.0)	200(79.7)	287(76.1)
Others	4(3.2)	12(4.8)	16(4.2)
Marital status			
In marriage union	120(95.2)	241(96.0)	361(95.8)
Not in marriage union	6(4.8)	10(4.0)	16(4.2)
Residence			
Rural	102(81.6)	20.6(82.1)	308(81.7)
Urban	24(19)	45(17.9)	69(18.3)
Table 1 continued.....			
Husband education			
No formal education	24(19.0)	77(30.6)	101(26.8)
Primary education	66(52.4)	151(60.2)	217(57.6)
Sec edu and above	36(28.6)	23(9.2)	59(15.6)

Mother occupation			
House wife	93(73.8)	231(92.0)	324(85.9)
Student	10(7.9)	14(5.6)	24(6.4)
Government employee and others	23(18.3)	6(2.4)	29(7.7)
Maternal education			
No formal education	8(6.3)	38(15.1)	46(12.2)
Primary education	55(43.7)	159(63.3)	214(56.8)
Sec edu. and above	63(50.0)	54(21.5)	117(31.0)
Monthly income			
<200	33(26.2)	106(42.4)	139(36.9)
200-300	20(15.9)	42(16.7)	62(16.4)
301-500	36(28.6)	66(26.3)	102(27.1)
>500	37(29.4)	37(14.7)	74(19.6)
Access to radio			
Yes	85(67.5)	122(49.0)	207(53.3)
No	41(32.5)	127(51.0)	168(44.8)

6.2 Practice of study participant during last Pregnancy and delivery

Regarding ANC attendance, more than half of the cases 91(72.2%) and 105(41.8%) of the controls attended ANC. Figure 1 below.

Majority of cases 86(94.5%) and 85(81.7%) of controls have received information regarding delivery complications in their ANC visits. And only 51(20.3%) of controls received information regarding delivery place but than half of the cases 67(53.2%) of cases informed about place of relation to number of ANC visits considerable number of cases 85(81%) 79(86%) controls attended 2-4 times in their last pregnancy.

Table 2: below elaborate more about practice of participant mothers in pregnancy.

Figure 2: Bar chart showing ANC attendance versus type of assistance in delivery Kedida Gamela District, 2012

Table 2: Practice of participant mothers during their pregnancy Kedida district, 2012

Variables	Cases (n=126)	Controls (n=251)	Total (N=377)
	No (%)	No (%)	No (%)
No. of ANC visits			
1	4(4.40)	14(13.3)	18(9.2)
2-4	79(86.8)	85(81.0)	164(83.7)
4+	8(8.8)	6(5.7)	14(7.1)
Information about delivery complications			
Yes	86(94.5)	85(81.7)	171(46.4)
No	5(5.5)	19(18.3)	24(6.4)
Information about delivery place			
Yes	67(53.2)	51(20.3)	118(31.3)
No	59(46.8)	200(79.7)	259(68.7)
Complications during pregnancy			
Yes	40(31.7)	59(23.5)	99(26.3)
No	86(68.3)	192(76.5)	278(73.7)

6.3 Health system related characteristics and actual practice during respondents

In relation to health system related factors more than half of cases replied that they can get transportation to go to the nearest health facility than half of the controls 169(67.3%) do not get transportation service. Affordability of transport payment shows more number of cases 84(66.7%) the payment than the controls 77(30.7%). Majority 303(80.4) of the have good attitude towards skilled delivery service, 122(96.8%) of case 181(97.2%) of controls. More than half 218(57.8%) of the respondents or more children 68(57.8%) of the cases and 150(59.8%) and controls. were also asked about the decision maker on the place of their last about 106(84.1%) of cases and 180 (71.7%) of controls assured that they decided the place of their last delivery by their own, however, moderate proportion of cases 20 (15.9%) and 70 (27.9%) of controls reported that others (husband's, mother in-law) were powerful to decide the place of delivery. The study participants were also asked about their most recent practice and 57(45.2%) of cases and 85(33.9%) of controls faced delivery complications. Regarding their length of labour majority of cases 128(51%) of controls replied that their recent labour lasts less than half relation to their previous delivery those having more than one children 65(51.6%) of cases get skilled assistance and 216(86.1%) of controls get skilled assistance in their previous delivery. Table 3.

The main reasons for choice of type of assistance were also assessed cases and controls. Majority of controls 153(61.0%) choose non skilled

due to lack of money (they don't have information that delivery services of charge) and majority of cases 78(61.9%) choose skilled assistance were informed about delivery complications and best place of delivery their ANC visits. While the least part of cases 27(21.4%) get skilled because they faced problem in their previous delivery and only 14(5.6%) controls do not attend skilled assistance because home is sweet place for

Table 3: *Health system related characteristics and actual practice during of the respondents* Kedida Gamela District 2012, Southern Ethiopia

Variables	Cases (n=126)	Controls (n=251)	Total (N=377)
	No (%)	No (%)	No (%)
Importance of skilled delivery			
Yes	122(96.8)	147(58.6)	269(71.4)
No	4(3.2)	104(41.4)	108(28.6)
Transport availability			
Yes	70(55.6)	82(32.7)	152(40.3)
No	56(44.4)	169(67.3)	225(59.7)
Afford transport payment			
Yes	84(66.7)	77(30.7)	161(42.7)
No	42(33.3)	174(69.3)	216(57.3)
Attitudes to skilled delivery			
Good	122(96.8)	181(72.1)	303(80.4)
Not good	4(3.2)	50(19.9)	54(5.3)
No response	0	20(8.0)	20(5.3)
Complication during delivery			
Yes	57(45.2)	86(34.3)	143(37.9)
No	69(54.8)	165(65.7)	234(62.1)
Birth order			
1	37(29.4)	31(12.4)	68(18)
2-4	68(57.8)	150(59.8)	218(57.8)
5+	21(16)	70(27.9)	91(24.1)
Place of delivery decider			
Myself	106(84.1)	181(72.1)	287(76.1)
Others (husband, mother in-law	20(15.9)	70(27.9)	90(23.9)
Previous delivery place			
Home	24(26.9)	216(94.7)	240(75.7)
Health facility	65(73.1)	12(5.3)	77(24.3)

Determinants of skilled delivery service utilization

Logistic regression was used to measure the strength of association various socio demographic, pregnancy and delivery related characters. probabilities of utilizing skilled delivery service was analyzed and eight of twenty two variables showed significant association when analyzed in bivariate analysis.

With regard to maternal education, there was statistically significant between maternal education and skilled delivery utilization, cases having secondary education and above are 3.00 times more likely to get skilled than controls of having the same educational level. That means mothers education secondary and three times more likely to use skilled assistance those with no formal education with an AOR 3.00(1.193, 7.541). A significant difference was observed between case and controls in relation access to radio, those have access to radio are 2.158 more likely to get assistance but it lost its significance when adjusted for other variables. decision making power about getting skilled delivery service was between case and controls and showed cases are 2.05 more likely than get skilled assistance when they decide by themselves rather than their decision, but when adjusted it is not statistically significant with AOR 1.213 (0.452,3.255).

Skilled assistance is also associated with ANC attendance, the odds of attendance was 3.15 times higher among mothers who follow ANC in their pregnancy, than those who don't follow ANC with other AOR 3.150 5.43). When we tried to analyze the relationship between information place of delivery during ANC follow up, significant difference was between cases and controls in choosing type of assistance, those having information were at least 3.7 times more likely to get skilled assistance without the information with AOR =3.744 95%CI 2.228 to 6.291 and significant even after adjustment. Birth order is another variable that significant after adjustment, cases needing delivery of their first ever child more likely to deliver in skilled situation than controls with an odds of Additionally those mothers requiring their first ever child are 3.883 odds to delivery in skilled manner than those mothers having more than four child AOR 3.883(1.780,8.472). Transport availability to reach the nearest health was also another predictor that predicts skilled delivery utilization. Those replied we can get transport service easily to the nearest health facility get assistance at the end of the day with an odd of 1.94 times more than cannot get transport service with (AOR=1.94, 95%CI: 1.179 to 3.194).

As can be observed in Table 4, variables which were statistically the dependent variable in the first model were analyzed together in the to appreciate maintenance of their significant association.

Table 4: Multiple logistic regression analysis results of factors affecting delivery utilization in Kedida Gamela District, 2012 Southern Ethiopia

Variables	Number of		Odds ratio	
	Case= 26	Control 251	COR (95%CI)	AOR (95%CI)
Maternal education				
No formal education	8	38	1	1*
Primary education	55	159	1.643(.0722,3.737)	5.542(2.2381,12.89)**
Secondary +	63	54		
Husband education				
No formal education	24	77	1	
Primary education	66	151	1.402(0.816,2.411)	
Secondary +	36	23	5.022(2.505,10.067)	
Mother occupation				
House wife	93	231	1	1
Student	10	14	1.744(0.761,4.136))	1.643(0.722,3.737)
Employed(gove, others)	23	6	9.522(3.756,24.136)	5.542(2.381,12.896)**
Monthly income				
<200	33	106	1	
200-300	20	42	1.53(0.79, 2.96)	
301-500	36	66	1.752(.997, 3.078)	
>500	37	37	3.212(1.762, 5.854)	
Access to radio				
Yes	85	122	2.158(1.379, 3.378)	
No	41	127	1	
ANC attendance				
Yes	91	35	3.615(2.274, 5.747)	3.150(1.825,5.437)
No				

Table 4 continued....

Information on delivery place

Yes	67	51	4.453(2.795,7.095)	3.744(2.228,6.291)**
No	59	200	1	1*

Transport availability

Yes	70	82	2.576(1.66, 3.998)	1.94(1.179,3.194)**
No	56	169	1	1*

Birth order

1	37	31	3.978(3.011, 7.871)	3.883(1.780,8.472)**
2-4	68	150	1.511(0.858, 2.66)	1.507(0.801,2.834)
>4	21	70	1	1*

Delivery Place decider

My self	106	181	2.05(1.181, 3.559)	
Others (husband, mother in-law)	20	70	1	

** Significant variables after multivariate analysis having p-value less than 0.05.

* Reference value

7. Discussion

This study is first of its kind in Kedida Gamela District that attempted to investigate factors affecting skilled delivery service utilization among delivered women. The study has highlighted some of the barriers not to skilled delivery service in Kedida Gamela District.

Attending skilled delivery service was dependent on some socio individual level and health system related factors.

In this study socio demographic factors (maternal education, husband maternal occupation, average monthly income, access to radio), individual factors (making of decision on delivery place) and health system and related (ANC follow up, information given on place and complications ANC, availability of transport access to the nearest health facility, knowing importance of skilled delivery service and birth order) were among the factors affecting skilled delivery utilization.

Among the above factors maternal education, ANC attendance, place of delivery during ANC, transport availability and birth order are the important predictors in determining utilization of skilled delivery service.

Those mothers, whose education was secondary and above were 3.00 likely to attend skilled delivery service with (AOR=3.00 95% CI1.196

Many previous studies done in Ethiopia jimma, (25) adigrat, (30) and developing countries Nigeria(29), Tanzania(28), Indonesia(32) Mexico(27) India (45) have found maternal education as one of the most important determinant of skilled delivery utilization. Some other studies don't show association between maternal education and skilled delivery service (33). The main reason for this may be knowledge, modern attitude, better communication with spouses', higher autonomy within household all this increase chance of skilled delivery service. Additionally as maternal education advances house hold earnings may also rise and make environment for seeking skilled delivery service.

Another predictor that has shown important influence on skilled delivery is ANC attendance and information given about delivery place and related complications during ANC attendance. Those mothers who follow ANC their pregnancy are 3.15 times more likely to attend skilled delivery service those who don't follow ANC during pregnancy.

Those mothers who have information during ANC about delivery place delivery complications are 3.744 times more likely to get skilled assistance delivery. These findings are in line with studies done Ethiopia (22), Tanzania(16) and rural Vietnam(21).

This may be explained in such a way that the exposure of the women to service in general and the information they gathered during the ANC visit, have influenced. Based on these findings even though ANC attendance is good opportunity to provide pregnant women information about delivery and related complications it is not fully utilized. But as far as this study is designed to assess quality of ANC services, these findings cannot be conclusive and further comprehensive studies are required in this regard.

Transport availability to reach the nearest health facility was also another predictor that predicts skilled delivery utilization. Those who replied we transport service easily to the nearest health facility get skilled assistance end of the day with an odd of 1.94 times more than those who cannot get service. Previous studies done in Ethiopia (Jimma) (25), Zambia(37), and Tanzania (28) show similar findings. Another study shows minor distance and transport availability (40). The population impact of poor geographic access to emergency obstetric care was at least of similar as that of maternal education, household poverty, or lack of maternal Birth order was found as one of the significant predictors for selection of delivery service. Mothers giving birth for the first child are 3.883 times likely to deliver in skilled manner than those having four or more children. findings are also in line with many other studies done in Ethiopia (Adigrat) India(45) and other places(20,22,26). The possible explanation for skilled delivery service among mothers who deliver for their first ever child be those mothers are younger and has better understanding about skilled delivery service and other maternal health care. In addition, due to low experience they may fear and could motivate to seek some assistance birth. In addition mother with more number of children might think that is normal and develop more-reliance in their home assistance. With regard to other predictors of skilled delivery, our finding did not any supporting evidence that age, monthly income, access to radio, ANC attendance, delivery place decision made by to show statistically difference between case and controls. The inconsistency of these findings be due to difference in methodology (design, sample size) and difference socioeconomic status of participants.

8. Strength and limitations of the study

Strength

- Random selection of study subjects
- Community based case and control searching
- Design used (case control) is more reliable to answer the research objectives

Limitations

- The recall period used is less than one year to minimize recall bias, is still long to be affected by recall bias.
- The health system related factors are not studied from provider view. The results show only study participants response.

9. Conclusion

This study revealed that, among the major factors affecting skilled delivery service utilization, maternal education, ANC attendance, information on delivery during ANC visit, transport availability to the nearest health facility birth order were positively associated with skilled delivery service. The problem of low utilization of skilled delivery utilization is still there in Ethiopia and many other developing countries. Measures taken to improve above findings indirectly help in increasing utilization of skilled delivery and thereby decreasing maternal mortality ratio and accelerates MDG 5.

10. Recommendation

Base on the findings the following recommendations are made:

- Maternal education has shown to be one of the most important of increasing skilled delivery care utilization. Therefore government education) need to improve the level of education mothers and their
- Health workers need to be encouraged to use ANC visit opportunity should educate best delivery places and associated complications for women. The healthcare providers need take the full advantage of this
- All pregnant mothers need to be informed that not only the first birth risk but all pregnancy is at risk and knowledge of mothers need to be behavioral change communication and other available methods by Health providers.
- Given that those mothers without transport access are less likely to skilled delivery services, the regional health bureau in collaboration with health office need take responsibility of expanding maternal health care to rural areas along with culturally appropriate education campaigns.
- Comprehensive efforts to expand community based Information, Education and communication need to be made by zonal health woreda health office.
- Further comprehensive researches that include quality of ANC, system accessibility and resource availability should be done in the future health care providers.

11. References

1. World Health Organization. Maternal mortality in 2008: Estimates developed by WHO, UNICEF, UNFPA, and the World Bank Geneva.
2. WHO, UNFPA, World Bank. Trends in Maternal Mortality: 1990 to 2010.
3. Ransom E. Making motherhood safer overcoming obstacles on the pathway to care. 2002;
4. WHO. Core Health Indicators. World Health Organization Statistical Information System. 2007.
5. Hill T, Abouzahr C, Inoune M, Suzuki E. Estimates of maternal worldwide between 1990 and 2005: an assessment of available data. 2007; 370:113-9. Lancet. 2007;370:113–9.
6. WHO, UNICEF, UNPF. Maternal mortality in 2000: Estimates by WHO, UNICE and UNFPA ,Geneva. 2004.
7. Federal Democratic Republic of Ethiopia, MOH. HIV/AIDS and the Health-related Millennium Development Goals: The Experience in Sep.
8. Central Statistical Agency Addis Ababa, Ethiopia. Ethiopia. Ethiopia Demographic and Health Survey. 2011.
9. Federal Democratic Republic of Ethiopia, MOH. Health and Health Related Indicators. 2007.
10. Lawn J, Cousens S, Zupan J. 4 million neonatal deaths: when? Why? Lancet. 2005;365(9462):891–900.
11. WHO. Reduction of maternal mortality. A joint WHO/ UNFPA/UNICEF/World Bank statement. Geneva. 2007.
12. Cambell O, Graham W. Strategies for reducing maternal mortality: on with what works. Lancet. 2006;368(9543):1284–99.
13. Stanton C, Blank A, etal. Skilled care at birth in the developing progress to date and strategies for expanding coverage. Journal of science. 2007;39(1):109–20.
14. Central Statistical Agency. Ethiopian Demographic and Health report. 2005.
15. Lindmark G, Berendes H, Meirik O. Antenatal care in developed countries. Paediatr & Perinat Epidemiol. 1998;12(1):4–6.
16. Moke M, Jennifer R, Oona M. High ANC coverage and low skilled attendance in a rural Tanzanian district: a case for implementing a birth intervention. BMC Pregnancy and Childbirth. 2010;10:13.
17. Carroli G, Rooney C, Villar J. How effective is antenatal care in preventing maternal mortality and serious morbidity? An overview of the evidence. , 2001;15(1): p. 1-42. Paediatr & Perinat Epidemioly.
18. Andersen R. Revising the behavioral model and access to medical Does it matter. Journal of health and social behavir. 1995;36(1):1–4.
19. Ekele B, Tunau K. Place of delivery among women who had care in a teaching hospital. Acta Obstet Gynecol Scand. 2007;86:627–30.

20. Sabine G OM. Still too far to walk: Literature review of the of delivery service use. *BMC Pregnancy and Childbirth*. 2009;9(34):4.
21. Duong D, Binnis C, Lee A. Utilization of delivery services at the health care level in rural Vietnam. *Soc Sci Med*. 2008;59(12):2585–95.
22. Tura G, G/Mariam A. Safe delivery service utilization in Metekel North west Ethiopia. *Ethiop j health sci*. 2008;17(4).
23. Mekonnen Y, Mekonnen A. Factors influencing the use of maternal healthcare services in Ethiopia. *J Health Popul Nutr*. 2002; 21:374–82.
24. Onah H, Ikeako L, Iloabachie G. Factors associated with the use of maternity services in Enugu southeastern Nigeria. *Social Science & Health*. 2006;63:1870–8.
25. Ayele B. What Factors Determine Delivery Practices Of Pregnant Women? Ethiopia, Jimma. Addis Ababa; 2005.
26. Amooti B, Kabakyegna K. Factors influencing use of antenatal and delivery care in Uganda. Uganda Marara district Director of Health 2004;
27. Sarah B. Does quality of prenatal care matter in promoting skilled institutional Delivery? Mexico. *Maten Child Health Journal*.
28. Mwifadhi M, Joanna A, Adiel K, et al. Factors affecting home rural Tanzania . *Tropical Medicine and International Health*. 2007 87.
29. Stella B, Adesegun F. Determinants of use of maternal health Nigeria - looking beyond individual and household factors. *BMC Childbirth*. 2009;9(43).
30. Mihret H, Misganaw F. Birth preparedness and complication among women in Adigrat town, northern Ethiopia. *EthiopJHealth Dev*. 2008;22(1).
31. Nuwahay F, Amoti-kugna B. Predictors of home delivery in Rakai District, Uganda. *Afri JRep Heal*. 1999;3(2):79–86.
32. Klstiana S. Socio-economic and demographic determinants of health care utilization in Indonesia. Faculty of Social Sciences, The University of South Australia, Adelaide. 2009;
33. Nigussie M, Haile mariam Da, Mitiku G. Assessment of safe service utilization among women of childbearing age in north Gondar west Ethiopia. *Ethiop.J.Health Dev*. 2004;18(3):145–52.
34. Mona S, Saifuddin A, Donna S. Influence of Women's Autonomy Access to Health Services on Maternal Health Care Utilization in Rural 2008;
35. Ruhul A. Socioeconomic factors differentiating maternal and child seeking behavior in rural Bangladesh: A cross-sectional analysis. 2006;
36. Rose N, Japhet Z, et al. Use pattern of maternal health services determinants of skilled care during delivery in Southern Tanzania: for achievement of MDG-5 targets. *BMC Pregnancy and Childbirth*.
37. Sarah S. Study to explore barriers to utilization of maternal delivery services in Kazungula district, Zambia. 2009;

38. Manuela D, Valery R, et al. Determinants of utilization of maternal services after the reduction of user fees: A case study from rural Burkina Health Policy Plan. 10:1016.
39. Sabina G, Jonathan C, Oona M, et al. The Influence of Distance of Care on Delivery Place in Rural Zambia. plos medicine. 2011;8(1).
40. Kruger C, Olsen O, Mighay E, Ali M. Where do women give birth in Tanzania? Rural and Remote Health. 2011;11:2.
41. Carter, Alexandra. Factors That Contribute to the Low Uptake of Care during Delivery in Malindi, Kenya. ISP Collection [Internet]. 2010 2012 Apr 3];(821). Available from:
http://digitalcollections.sit.edu/isp_collection/821
42. Fantu A. Factors affecting utilization of skilled delivery service recently delivered mothers in Bahirdar special zone, North West Ethiopia student]. Addis Continental institute of public Health; 2010.
43. Moke M, Jennifer R, et al. High ANC coverage and low skilled in a rural Tanzanian district: a case for implementing a birth plan BMC Pregnancy and Childbirth. 2010;10(13).
44. Kembata Tembaro Zone Health Department. Annual review report. 2010/2011. kembata Tembaro zone, SNNP, ethiopia; 2011.
45. Amardeep Thind, Mohani A. Where to deliver? Analysis of choice of delivery location from a national survey in India. BMC Public Health.

12. Annex

Annex A: Conceptual framework

Conceptual framework of determinants of skilled delivery care
at birth(42)

Annex B: Consent form

A questionnaire prepared to assess the factors that affect skilled service in kedida Gemela woreda, Kembata Tembaro zone, Ethiopia.

Greeting

I am _____ Recruited as a data collector research that will be conducted by university of Gondar student Tadesse, among recently delivered mothers in Kedida Gamela you are randomly selected, I kindly request you to participate in this In this study I will only ask you some questions regarding your pregnancy and delivery.

Your name will not be included in the information. I promise to keep confidentiality of your response. It takes us about 30 minute.

I have been briefly informed about the study and I clearly objective. Consequently, I here approve my consent to take part in study as an Interviewee with my signature.

Signature_____

Date_____

Name and Signature of interviewer

Name of kebele _____

Name of data collector; _____ Signature

Serial no. _____

Date; _____

Start time; _____

Annex C: Questionnaire

1. Case

2. Control

Section I – Assessment of Socio-demographic and socio-economic variables

No.	Questions	Responses	Remark
101.	Age in years	-----	
102.	Ethnicity	1.kembata 2.hadiya 3. amhara 4.alaba 5.others (specify)	
103.	Religion	1.protestant 2.orthodox 3.catholic 4.musilim 5.others (specify)	
104.	Marital status	1.married 2. single 3. divorced 4.widowed 5. others (specify)	
105.	Educational level	1.illitrate 2.read and write 3. primary education 4.secondary education 5. diploma and above	
106.	Occupation	1. house wife 2. government employee 3. private employee 4. Student	
107.	Husband educational level	1.illitrate 2.read and write 3. primary education 4.secondary education 5. diploma and above	
108.	Average household (family) income per month	-----ETB	
109.	Residence	1.rural 2.urban	
110.	If rural How long it will take to come to	----- minutes	

	the health institution? (in minutes)		
111.	Mode of transport while coming to health institutions	1. on foot 2. by horse 3..by vehicle	
112.	Number of living children	_____	
113	Media exposure	1. listens to radio 2. watches television 3. from neghioubors	

Section II assessment of obstetric care related variables

No.	Question	Response	Remark
201.	Did you attend ANC for current pregnancy	1. yes 2. no	If no skip to Q207
202.	Number of ANC visits	_____	
203.	During ANC follow up, did you receive any info, regarding pregnancy and delivery complications?	1. yes 2. no 3. do not know	If no skip to Q 205
204.	If yes what danger signs you informed about?	1.vaginal bleeding 2. head ache 3.marked & fast weight signs 4.dizziness 5.malaria 6..others specify	
205.	Where you informed about were to deliver?	1.Yes 2.no	If no skip to Q207
206.	If yes where are you recommended to delivery?	1. health facility 2.home	
207	Any complications during pregnancy?	1.yes 2. no	
208	What is/ are the complications?	-----	
Awareness questions			
209.	Any pregnant women is susceptible to face delivery complications	13. I agree 2. I disagree 3. Indifferent	
210	Like any pregnant women, I am susceptible to face delivery complications	13. I agree 2. I disagree 3. Indifferent	
211.	Delivery complications can be severe and may be hazardous to my well being.	I agree 2. I disagree Indifferent	

212.	Delivery complications can be severe and may be hazardous to the newborn.	1. I agree 2. I 3. Indifferent	
213.	Do you know the importance of Professional assistance at delivery?	1.yes 2.no	
214	If yes for question above how do you rate the importance?	1. Very important 2.Important 3. Less important 4.neutral	
215.	Can you tell me the importance of receiving professional assistance during delivery?	1. To prevent complication 2. To get healthy mother and baby 3. To have counseling and health education 4. Don't know	
216.	Where is the best place for delivery for you?	1. Home 2. Hospital 3. Health center 4. Health post	
217	Who is significant in deciding your place of delivery?	1.my husband 2.my mother in –law 3.my friends 4.myself 5.others (specify)	

Section III health service related variables

No.	Question	Response	Remark
301.	How long will it takes to reach your nearest health facility?	-----hours	
302.	Can you get transportation services to reach the health facility?	1. yes 2. no	
303.	Can you afford to pay for the transportation services?	1. yes 2. no	
304	Your attitude towards skilled delivery service	1. good 2. not good 3. no response	If good for Q304 go to 305 if not good go to Q306
305	What makes your attitude good towards skilled delivery service?	1. Quality service provision 2. Health workers approach 3. Privacy	

		4. Waiting time low 5. Service charge 6. Others (mention)	
306.	What makes your attitude not good towards skilled delivery service?	1. Quality service provision 2. Health workers approach 3. Privacy 4. Waiting time low 5. Service charge 6. Others (mention)	

Section IV-Assessment of actual Practice of mothers for the last pregnancy and delivery

401.	When did you deliver your last baby?	-----	
402.	Birth order	_____	
403.	Where did you deliver in your last delivery?	1.health facility 2.home	
404	Who decided where to deliver?	1. husband 2. mother in-law 3. myself 4. others	
405	Face any problem?	1.yes 2.no	
406.	What type of problem?	1.prolonged labor 2.retained placenta 3.hemmorghe 4.others (specify)	
407	What was the delivery outcome?	1. the child is alive 2.the child is dead	
408	If home delivery who assisted you?	1. TBA 2. Mother in-law 3. Other relatives 4. HEW	

409.	How long does the labour take?	<ul style="list-style-type: none"> 1. less than half day 2. one day/one night 3. one and half day 4. more than one and half day 5. I don't remember 	
410.	What was your main reason to delivery?	<ul style="list-style-type: none"> 1. Realize too late that I was in labor 2. Unkind health center staff 3. Husband, mother or mother-in-law refused to allow institutional delivery 4. To long distance, no transport access 5. Onset during night 6. Lack of money 7. not satisfied during ANC 8. fear of operation 	
411.	If delivered in health institution Who assisted you?	<ul style="list-style-type: none"> 1. HEW 2. midwife 3. clinical nurse 4. Physician/health officer 	
412.	What was the main reason for skilled assistance during delivery?	<ul style="list-style-type: none"> 1. I always deliver in skilled 2. previously I faced problem in home delivery 3. I was informed about skilled delivery 4. I faced problem that makes me to deliver in health facility 5. others (mention) 	
413	Where did you deliver in your previous delivery?	<ul style="list-style-type: none"> 1. Home 2. Health facility 	

THANK YOU!

Annex D: Information sheet

Title of the Research Project

Factors affecting utilization of skilled delivery service among delivered women in Kedida Gemela District, Kambata Tembaro Southern Ethiopia, 2012.

Name of Principal Investigator: Habtamu Tadesse

Name of Advisors: Dr Getahun Asres

Name of the Organization: Institute of Public Health, Gondar Medicine and

Health Sciences, University of Gondar

Name of the Sponsor: University of Gondar

Introduction

This information sheet is prepared with the aim of explaining about research project that you are asked to join by the group of research investigators. The research group includes one main principal five trained data collectors, two Supervisors and one advisor from University of Gondar.

Purpose of the research project

The purpose of this project is to assess factors affecting utilization skilled delivery service among recently delivered women in Kedida Gamela woreda. According to different reports and researches the utilization level of skilled delivery service is very low. This study identify the main factors affecting skilled delivery utilization and highlight on how to increase utilization of skilled delivery service thereby improvement of maternal health.

Procedure

The study mainly uses data obtained through study subjects interview. Permission will obtained from university of Gondar, regional health bureau, Kambata Tembaro zonal health Kedida Gemela woreda health office and the selected kebele's administrative office as well as study subjects.

Risk and/or Discomfort

By participating in this research project I believe there are minimal discomforts except wasting of some time (around 20 minutes). piece of information will be kept confidentially. There is no risk in participating in this research.

Benefits

There is no direct benefit from participating in this research but the of the study are very important in improving maternal and child programs.

Incentives/Payments for Participating

There will not be monetary benefits or any provided incentives to participating in this research project.

Confidentiality

The information collected for this research project will kept and information will be stored in a file and kept locked with, without name, but a code number assigned to it. And it will not be accessed anyone except the principal investigator.

Right to Refusal or Withdraw

Your participation in this research study is voluntary. You may to participate and you may withdraw your consent to participate at time without losing any of your right.

Person to contact

This research project was reviewed and approved by the Ethical Committee of University of Gondar. If you want to know more information you can contact the committee through the address you have any questions or concerns about this study please following individuals:-

1. Mr. Habtamu Tadesse: cell phone +251920813242, E mail: hatw83@yahoo.com the principal investigator
2. Dr. Getahun Asres (MD, MPH, DTM&H): School of Public CMHS, University of Gondar Tel: 0911 06 66 75, Advisor

Annex E: Kembatigna version

Gondori univeresiteen

Fayyimana hakkimoma kollegi

Minnaabokki fayyima rosha mini

Kadida Gamelli woraddani ammakatti lubbamata fayyima angaani illitumbogga kantana ka'llita duhhakkata serekketiha xa'mmuta.

Mirrimiraantassi beqqamiha ittata kulleno forma

Su'mmue _____ yamamano. Gondoori rosanchu ikke habtamu tadassi assano mirrimiriha hassissano qu'mmaotaati wallemihu. Tessu xa'mmankeehu hongeena chillata jechon aphante mammatita xa'mmutaat. Su'mmukki xa'mmossi xaffamanoba'a, xa'mmussi horomani 20-30 daqiqqi qaxxa ikkau; xa'mmossibba agich birsit kanni mirimiraani beqamukki ammakka fayyimata danamuagini dooriha abbish ka'llano tanne beqanituntunta mashimani xa'mmankke.

Mirrimirissi tanne danamogga agganoga kullamo anichi zakkini mirrimirantassi agota ittamikey kanin woroddin furmai afushin

Furma _____

Barru _____
Xa'mmussi xa'mmanchi su'mmaha furmahaa
Kabalit _____
Su'mma _____
Xa'mmo wolluta _____
Barru _____
Xa'mmusi jammarto jechuta _____

Xa'mmuta

I. Mexxomaa galteenii leinnini aphante xa'mmuta

101. Ummurru _____
102. Minnabokku 1.kambatta 2.hadiyya 3. Amaara 4. Halaaba
5.woloot (kulli)_____
103. Amma'nnatu 1.protestanta 2. Ortodokissa 3. Issilama 4.
5. wollot (kulli)_____
104. Ebbaqanchi hagaru 1. Ebbaqamemi 2. Ebbaqamimba'a 3.
hi'rra memi 4. ebbaqamemi manchu reheu 5. Wollot
(kulli)_____
105. Rosha gardabu
1.mexxura rossumbuta
2. Kattabuha qarauha dandami
3. wonna gardabba (1-8) 4. Lanki
5. Dipolomahaa issich aluduha
106. Hujje hagaru 1. Minnita amma 2. Mangistita
3. gaggi hujjit yoe
107. Minikki manchi rosha gardabu 1.mexxura rossumbua
2. Kattabuha qarauha
3. wonna gardabba (1-8)
4. Lanki gardabba (9-12)
5. Dipolomaha issich aluduha
- 108.Matto aggani azzeni habbanka birra
109. Heanti bechu 1. Gaxxara 2. Kattama
- 110.heantihu gaxxara ikkeda fayyima mini illano illani qaxxech
hawwanika daqiqa xa'mmanohe? _____ daqiqa.
111. Fayyima mini waliha mahani ta'mmitantihu?
1. lokkata 2. Faarsu 3. Makkina
112. Tessu meiti ossuti yokke? _____
113. hakkanbechichet mamamtu dudubu maccotantihu?
1. Radoonu yoe 2. Televisionu yoe 3. Ole mannichet

II. Hongge te lanfollomamomana illi jechoni aphante

201. Tani hongentakki fayyima minnan lanfollamo asseno
aqqitentindo?
1. Aa aqqemi 2. Aqqimba'a
- 201.Aqqitentida meita koddada aqqitent? _____
203. roshshasi asseno jechuta hongena illeno jechon yoo
hawissa
xawwakata kullemahenido? 1. Aa kullemae 2.
204. Alludin yoo xammoha fanqashshuki Aa kulle mae ikkeda
hawwitanehat
Kullemakehu? 1. Folli irri heggegon qeggi zazzitanne 2. boqqo
damumita
3. laq laq assu 4.
- 205.hakkane illu hassissanohega kullemahendo?
1. Aa kullemae 2. Kullenimbae

206. Hakkane illu woyya yeen kullemahe? 1.fayyima minnen 2. Mineentai

207.hongentakimammatithawwakatityoouikkendo? 1. Aa yoou Yobba'a

Illeno jechuta yoo hawwakatanne zahiccu daggi

208. hawwakassi mahan ikke? _____

209. hati mentichuti illita jehuta hawwu affoseta dandano.

1. ittamami 2. Ittamamba'a 3. Lamontassin yomba'a

210. Anni hattani menitichiganka hawwantassi affami dandami.

1. ittamami 2. Ittamamba'a 3. Lamontassin yomba'a

211. illeno jechuta yoo hawakkati abbissi hillata ikkotanne folliha danditau.

1.ittamami 2 . Ittamamba'a 3.

yomba'a

212. illeno jechut yoo hawwakati abbissi hillatani illanitaa chilla baissi danditau

1. ittamami 2. Ittamamba'a 3. Lamontassin yomba'a

213. illeno jechuta fayyima lubbamabanni illi kallatuta daganindo?

1. Aa dagami 2. Dagamiba'a

214. alludin yoo xa'mmo fanqashikki Aa ikkeda kallatussi

1. Abishshi ka'llano 2. Ka'llano

3. qahunka ka'llano 4. Mexxontassi yomba'a

215. fayyima lubbama anganni illu kallatussi mahanido

1. hawwakkata ka'mmamihat

2. fayyata ammata ossuta daqihatti

3. sazzannata roshshata aqihatti

4. dagamiba'a

216. kessa illiha abbissi danamit mann't hakkabatti?

1. mineni 2. Fayyima minni

217. Ayyeti hakkanu illu hassissanohegga wossani dandanohu

1. minie annu 2. Balluta'nni 3. Jallakata'nni 4. Annete

Wollot (kulli)

I. Fayyama minakkani aphphanti yoo xa'mmuta

301.onxanne yoo fayyima mini illiha hawankata jechuta _____sa'ta.

302. fayyima minniha marriha woqqani tiransporti kallatuta

1. Aa daqqami 2. Daqqamiba'a

303. Tiransportihansi batti danditannindo?

1. Aa dandammi 2. Dandamba'a

304.lubbama fayyima hakkima anganni illon yokke zahiccu

1.danamua 2. Danamuaba'a 3. Fanmqashut yoeba'a

305.alludin yoo xa'mmo zahiccukki danamu ikkeda danamu ihuntaa asseru mahani?

1. Danamitta kallatuta daqua

2. Fayyima hujjatanni hincennussa danamu ihuans

3. Fayyima minnusi ammaka (privacy) danamu ikkotannehat

- 4.Kallatuata daqqi marremachi qorrabenno jechuti qahutta
ikkotannehat
5. Fayyimassi minnu bassisano bennu qahuu ikkotanehati
6. Wollot (kulli)
306. xa'mmo wollu 304 fanqashikki ' danamuaba'a' ikkeda danamu
ikkumbogga asseru mahani?
1. Danamitta kallatuta daqua hoggu
2. Fayyima hujjatanni hincennussa danamu ihu hoggu
3. Fayyima minnusi ammaka (privacy) danamu ihu hoggu
- 4.Kallatuata daqqi marremachi qorrabenno jechuti batinasha
ikkotannehat
5. Fayyimassi minnu bassisano bennu hollma ikkotanehati
6. Wollot (kulli)

II. Illito ammakka illissa haggara daggi xa'mmuta

401. onxannekki cilla hakkadat illitontihu? _____
402. Meikke cilla ? _____
- 403.hakkannenet illitontihu? 1. Minnentai 2. Fayyima minnenet
404. hakkane illu hassisanohegga wossano ayyeti?
1. minie annu 2. Balluta'nni 3. Jallakata'nni 4. Annete gagantae 5.
Wollot (kulli)
- (minnentaki illito amakka x'mmo wollo 404 jammari yoo xa'mmuta
xa'mmiye fayyima mineen illito ammakata xa'mmo wollo
405. illitaneen hawwu yoo ikkenido? 1. Aa you 2. Yoba'a
406. hawwussi mahani 1.baallu abishi dasua 2. Zakkiru fullu
2.hallamu qegu zazzu 4.wolloti (kuli)
- 407.Qallantossi chilla fayimat hatigutanni?
1. Fayya follin you 2.reh fajeeu
408. minnentakki illitentida ayet ilsishokehu?
- 1.rosha illisisanchut
- 2.balluta'nni
3. wollu illamu
409. ballussi hawankkata jechutta aqqe
1. bakkane barrech qahu
2. mattu ankariha matu barraha
3. matto barrech matto barre bakkanich abba
4. qaggi danidamiba'a
- 410.Mine illihanki Qoome mashikatuti mahani
- 1.Ballayomiga abishi dashi dagua
- 2.Fayyima mini hujatanni danamu ihu hoggu
3. Balluti, mini annu te wollu illamu fayyima mini marru
4. Fayyima minu qe'rra yotanne tiransporta daqamiba'a
5. Ballu jammareihu ankari ihhuansi
- 6.honge jechuta asseno fayyima mini kallatonni bajigu hoggua
7. Batteno gizzu heu hoggua

8. Godabaga zarenumbogga wajju
411. Fayyima minnen illitentida ayyet illisishokehu?
1. Illisanchut nersichut 2. Fayyima nersichut
3. Hakkinichu 4. Dagimba'a
412. Fayyima minnen illituntaa qomme mashikatiti mahani?
1. fayyima minneni illu roshai ikkobihati
2. kannichi birre minne illaneni hawwu ille'ebihati
3. fayyima minneni illuntaa kullemaetannehat
4. fayyima minneni illunta assano hawwu affoebihati
5. wollot (kulli)
413. Kannich birre yoo cilla hakanenet illitentihu?
1. minne 2. Fayyima minen
- Zakkanchon barggitanti xahu yoda?
Abish galaxxam

Mi hujjatatamanoga malessissano woraqqata

Mirmirissi Boqqo xahhu: Illita ammakat enke'nnanua fayyima illitunbogaa illitunta atta xawwakata kadida gameli woraddani, Xambaroo zoonani ,Mugeni Topheni, 2012.

Qomme Marramaranchu: Habtamu Tadassa

Sazzanata assanchi su'mmu: Dr. Getahun Asrasi

Mirimiraasi faqqajjo hujje minu: Gondorri univereste, Fayyimana Hakkimoma rosha collega

Agga

Ku mi hujjatamanoga malessisano woraqtu qixxammeihu universte rossanchuua Habtamu Tadesse wuddini ikki mirrimirissu agudenoga cakkissiha qixxameha.

Mirrimirissi Qaddu: kan mirrimirro qomme qaddu ilita ammakata hakkimani illitumbogga assita xahhakata woradissi azzen Annanat duddabakat mirimirakkat kulitaggini lubbamata fayyima hakkiman ilita amakka wolluti abbissi qahutta. Ku mirrimiru azzen mahanido ammakata fayyima minen illu kammayoi hashi hawwa hirri ma assu hassissanonido woqqa kullisan ammaka wonach woyissiha ka'llanua.

Birrisawanaqqanchussi: Mirrimirihanssi hassisano marajja birit birren ihen xa'mmuta xa'mmenua. Mirrimirissi hujje fikkadu Gondari univerestichi aqqemahanichi zakkin migenni kilili fayyima birroch,kembata tambaro zonni fayyima kifilichi, kadida gameli fayyima birrochchi aqqeno. Hikkanich zakkin maraxxanito kabale kifilachi aqqeno. Mirrimirrantassi beqqanita ammakach ittamissa malahano furma birissen aqqeno.

Mirrimirantassi bargammi wallano hawwu te makkumbu mirrimirani beqamin mexxu wallano hawwu yobba'a, kahunika aqqichi baggani. Horrunku hujjatamonoru misxirrussi qorabameha. wallano mexxu hawwuhu yoba'a.

Mirrimirantassi beqqamin dagamano annanu xiqqimu: tessu mexxu xiqqimuhu yoba'a, ikkoda mirrimirris wuxxetu ammaka danamuagin dorri abish ka'llano.

Ammanatutti: Kan mirrimiriha aqqeno hakku marrajuhuu abba affamano. Mexxo worraqat alleni su'mmu xaffamanoba'a alleni annano quxxurru xaffamano. Assamo marraja qomme maramaranchich wollu mexuhu xuddi danidanoba'a.

Mirrimirantassi beqqamuha gibuhaa: mirrimirrantasi beqqamiha danidenohu xalli ittannet. Beqqamu gibbiha maftu yohaa, issonin hakkan jechon mirimirchisi agurenni fulliha mexit maqqachut dandenua.

Daqqamenno Mannakati: mirrimirantassi aguniburru yodda daggi hassenteda worodin yoo silikkin hassawi danditenanita. Habtamu Tadesse 0920813242, Dr. Getahun Asres 0911066675.

Annex F: Declaration

I, the undersigned, senior MPH student declare that this thesis original work in partial fulfilment of the requirement for the degree of Master of Public Health.

Name: Habtamu Tadesse

Signature: _____

Place of submission: Institute of public Health, College of Medicine Health Sciences, University of Gondar.

Date of Submission: _____

This thesis report work has been submitted for examination with approval as university advisor.

Advisors

Name	Signature
Dr. Getahun A. (MD, MPH, DTM&H)	_____